

Refine Search

Search Results -

Terms	Documents
L16 and (705/2 705/3).ccls.	0

Database:

US Pre-Grant Publication Full-Text Database
 US Patents Full-Text Database
 US OCR Full-Text Database
 EPO Abstracts Database
 JPO Abstracts Database
 Derwent World Patents Index
 IBM Technical Disclosure Bulletins

Search:

L17

Search History

DATE: Monday, August 06, 2007 [Purge Queries](#) [Printable Copy](#) [Create Case](#)

<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L17</u>	L16 and (705/2-3).ccls.	0	<u>L17</u>
<u>L16</u>	L15 and (impact\$3 or affect\$)	9	<u>L16</u>
<u>L15</u>	L14 and profile	9	<u>L15</u>
<u>L14</u>	L13 and (progress\$7 or tim\$3) same (impair\$5 or injur\$3 or fracture or hurt) (estimat\$4 or compar\$4) same (dysfunction\$4 or non adj function\$4 or unfunction\$4 or malfunction\$4) same (level\$3 or capacity) same (organ or tissue or body) same component	14	<u>L14</u>
<u>L13</u>	L11 and (predetermin\$4 or predefin\$4) same qualiti\$	51	<u>L13</u>
<u>L12</u>	L10 and (compar\$4 or match\$4 or segment\$4 or dimens\$7) same (aggregat\$4 or populat\$4)	0	<u>L12</u>
<u>L11</u>	(business\$ or propert\$3 or liabilit\$3) same risk\$3 same profil\$3	186	<u>L11</u>
<u>L10</u>	<i>DB=EPAB,JPAB; PLUR=YES; OP=ADJ</i>	1031	<u>L10</u>
<u>L9</u>	(insurance same risk\$3) same (customer or client)same (segment\$4 or	0	<u>L9</u>

	measur\$6 or divid\$4) same profil\$3		
<u>L8</u>	(insurance same risk\$3) same (customer or client)same (segment\$4 or measur\$6 or divid\$4) same profile	0	<u>L8</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L7</u>	L6 and (select\$4 or choos\$4) same(predetermin\$4 or predefin\$4) same qualit\$3	0	<u>L7</u>
<u>L6</u>	(insurance same risk\$3) same (customer or client)same (segment\$4 or measur\$6 or divid\$4) same profile	6	<u>L6</u>
<u>L5</u>	L3 and (select\$4 or choos\$4) same(predetermin\$4 or predefin\$4) same qualit\$3	0	<u>L5</u>
<u>L4</u>	L3 and (select\$4 or choos\$4) same(predetermin\$4 or predefin\$4)same qualit\$3	0	<u>L4</u>
<u>L3</u>	L2 and profil\$3	8	<u>L3</u>
<u>L2</u>	(insurance same risk\$3) same (customer or client)same (segment\$4 or measur\$6 or divid\$4)same (case or portfolio)	18	<u>L2</u>
<u>L1</u>	(insurance same risk\$3) same (customer or client)same (segment\$4 or measur\$6 or divid\$4)same (case or portfolio) same (data or file)	10	<u>L1</u>

END OF SEARCH HISTORY

POWERED BY **Dialog****LOGOFF**Search
results: **3** titlesselect
all none

Titles on this page:

Display Checked

Display All

Search Report**Database Name Database Number**

ABI/INFORM 15

PROMT (90-
PRESENT) 16

TRADE&INDUSTRY 148

PROMT (1972-1989) 160

COMPUTER
DATABASE 275**Set****Description**S1 ((person? OR patient?)(s)(body OR tissue OR
organ)(s)((estimat? OR compar?)(s)(time))(s)
((dysfunction OR malfunction)))

S2 PY=((1970:2000))

S3 S1 and S2

S4 S3 and (((medical or healthcare or health(w)care or
hospital or medicine)(4n)(information or online or
technology or on(w)line or internet or network or
server or automated or computer or software) or
telemedicine or telehealth) or (pc=(737271 or
3573081 or 7374350 or 7372483 or 7374358 or
7372466 or 8098020) or nc=((51121 or 514191 or
514199) and 62) or cn=(6240 and 8320)) or (jn=
((health care management technology) or
(computers in healthcare) or (health data
management))))

S5 RD

S6 SORT /ALL/pd,a

-
- ☐ **1 Which heart valves should we use? (editorial)** - Nov 3 - 1990 - Gale Group Trade and Industry Database™
- ☐ **2 Coordinating patient care services in regional health systems: The challenge of clinical integration** - Winter 1993 - Word Count: 5631 - ABI/INFORM®
- ☐ **3 Indiana Heart Institute Hosts Two-Day Training on New 'Beating Heart' Surgery** - Jan 20 - 1997 - Gale Group Trade and Industry Database™
-

select
all none

Titles on this page:

Display Checked

Display All

To display full records, click a title or use the checkboxes and display buttons

POWERED BY **Dialog****Dialog eLink: USPTO Full Text Retrieval Options****Coordinating patient care services in regional health systems: The challenge of clinical integration**

Conrad, Douglas A

Hospital & Health Services Administration, v38n4, Page: 491-508, Winter 1993 (includes Charts References)

Regional health systems striving to achieve the vertical integration of health services ultimately must achieve clinical integration. It is theorized that vertical integration in health care involves the coordination of inputs and intermediate outputs to achieve the objective of optimal personal health. Within this context, the coordination of specialty services and primary care within a system structure - that is, the clinical integration of patient care - is central to the realization of vertically integrated regional health systems. Institution-level and environmental factors that facilitate and challenge clinical integration are identified. Clinical integrating mechanisms include information provision and its exchange among providers, care management strategies, common "clinical culture-building" structures, common educational programming, and payment and incentive-based strategies.

An earlier article (Conrad and Dowling 1990) argued that vertical integration in health care required integrating mechanisms in two parallel dimensions: (1) clinical integration of the process of patient care, and (2) administrative integration at both intraorganizational and interorganizational levels. This article posits that administrative and organizational-managerial integration is a necessary complement to the clinical integration of patient care, but it is the latter that is crucial to achieving a viable vertically integrated regional health system. For present purposes, it is assumed (but not shown explicitly) that clinical integration improves both the efficiency and effectiveness of patient care.

The failure to realize the central importance of patient care coordination has led managers and policy analysts to confuse related and unrelated diversification by hospitals and systems with actual vertical integration of the patient care process.(1) In this analysis the environmental and institution-level factors that facilitate, and those that limit, the clinical integration of health services are specified. A menu of potential integrating mechanisms is also described.

The article concludes by describing the next steps in developing clinical integration within regional health systems. The focus on regional health systems as a structural form in the marketplace derives from an explicit premise that the potential for clinical integration and cost-effective patient care is greatest in such systems.

CLINICAL INTEGRATION AS VERTICAL INTEGRATION

The coordination of the care of a given person over time is the sine qua non of vertical integration. Parallel system-level integration of management, organizational support (for clinical and nonclinical services), strategy formulation, and governance is also required to attain effective vertical integration.(2) I will sketch aspects of such "administrative" integration where they are logically required to motivate

the clinical integrating mechanisms that are the crux of this analysis.

Fundamentally, patient care coordination occurs for the individual person over time. Thus, true vertically integrated care demands a system capacity to plan, deliver, monitor, and adjust the care of an individual over time. Second, the essence of a system is the ability to "aggregate up" individual-level care coordination and clinical processes into a system-level capacity to plan, deliver, monitor, and adjust the structures and strategies for coordinating the care of populations over time. The coordination of care for individual patients is a necessary, but not sufficient, condition to realizing system-level clinical integration. One of the intrinsic advantages of regional health systems(3) is that they possess the scale and geographic area focus to support and systematize the clinical integration of services among otherwise disparate, independent providers.

Complete clinical integration implies the coordination of services across the continuum of care depicted in Figure 1. (Figure 1 omitted). Because this analysis stresses the care of persons over time, the figure does not reflect the conventional economic treatment of vertical integration, in which the control of inputs (the "manufacturing stage") represents backward or upstream integration while the control of distribution channels for output (the "retailing stage") constitutes forward or downstream integration.

In my alternative view of the vertical integration of health services, the more clinically and vertically integrated system has organized and coordinated its processes of caring for persons over time to move closer to attaining optimal health. Hence, the system with health promotion/disease prevention services and the prior (upstream) array of illness care is closer to personal health maintenance. In that sense, the system is more clinically integrated and invested in a capacity to provide coordinated care for individuals and populations over time.

FORCES INFLUENCING CLINICAL INTEGRATION

The market forces driving vertical integration have been examined extensively in the literature (Conrad et al. 1988; Harrigan 1985; Williamson 1975) and therefore will only be sketched briefly here as a set of propositions.

1. Prospective, risk-based payment of providers (especially capitation and per-episode-of-care pricing arrangements) has accelerated clinical integration by giving physicians and hospitals a financial incentive to manage the continuum of care.
2. The adoption of the Medicare fee schedule, which shifts reimbursement toward primary care physicians and away from specialists at the margin and the relative scarcity of primary care doctors compared to specialists, will encourage specialists to move into risk-and gain-sharing arrangements with primary care physicians (Fahey 1992; Arthur Andersen and the American College of Healthcare Executives 1991; Christensen 1992). The desire of payers to focus their contracting on fewer entities will reinforce this tendency.
3. The declining cost of distributed information networks relative to centralized information systems suggests that in the future it will be increasingly possible to integrate care across multiple delivery sites.
4. The aging of the population and the associated increase in chronic illness have raised the payoff to clinical integration at the rehabilitation-wellness end of the patient care continuum.
5. Technical innovation in specific management and governance arrangements--for example, matrix management structures, product line management, and technology acquisition committees (Anderson

and Lumsdom 1992)--indirectly will facilitate clinical integration by establishing a more supportive administrative infrastructure for coordinating patient care.

INSTITUTION-LEVEL FACTORS

Having discussed the market-level, environmental forces, I now sketch some of the institutional-level determinants of clinical integration. Figure 2 offers a more complete listing of the environmental and institution-level factors that facilitate and that impede clinical integration. (Figure 2 omitted).

The key institutional factors determining the extent of clinical integration at the regional health system level cluster around the ability to fashion a unified set of organizational strategies and structures that promote systemness in patient care. For example, hospital-physician collaborative arrangements will facilitate clinical integration. Regional health systems possess the scale, management capacity, and incentive to devise such structures, which would enhance managed care contracting with external payers and the development of the systems' own managed care products and clinically integrated programs.

The need to establish trust among primary care and specialty physicians and between groups of physicians and hospitals is paramount. Common understandings, a history of incremental commitments to one another that are honored in letter and spirit, and the development of explicit mechanisms (not necessarily monetary) for sharing risks, costs, and gains of patient care improvement--all are not only socially and morally sound in themselves, but they economize on the transaction costs of devising and enforcing more formal arrangements.

Another primary institution-level driver of clinical integration is the capacity to "systematize" the acquisition, use, and evaluation of technology. Regional health systems with a dominant institutional provider (e.g., tertiary referral hospital or multispecialty practice clinic integrated with a major hospital) have a comparative advantage in orchestrating such centralization of technology. The quality gains from such technologic specialization have been demonstrated (Luft and Hunt 1987). Eastaugh (1992) has recently shown significant cost savings accompanying hospital service specialization.(4)

The size of the local market, nature of primary care-specialist referral networks, and physician-to-specific-hospital admitting patterns extant in the area will shape the form of this technology coordination. Larger markets (measured in terms of population size and geographic reach) ultimately will support multiple clusters of major hospitals linked exclusively with alternative networks of single- and multispecialty physician groups. Coordinating patient care technology and integrated information systems will be the linchpins of clinical integration for those competing systems.

MECHANISMS FOR CLINICAL INTEGRATION: WITHOUT COMMON OWNERSHIP

In theory, clinical integration is possible without common ownership of all the stages in the patient care (production) process. Let us consider the key clinical integrating mechanisms at the regional system level: information provision and its exchange among providers, care management strategies, common "clinical culture-building" structures, common educational programming, and payment and incentive-based strategies.

INFORMATION PROVISION

Clinical integration the coordination of care for individual persons and for populations--is intrinsically an information-intensive activity. More coordinated health care will be achieved by the regional health care system that maintains a computer-based patient record (CPR) for its patients, which configures a

"robust" CPR system for optimally realizing the capabilities of such records.

As articulated in contemporary analyses of CPR technology (Institute of Medicine 1991; Safran et al, 1991), the technical capacity exists to develop both the CPR and corresponding robust systems within the next five to ten years. Current CPR systems maintain large data dictionaries and the capability to record all individual patient data by time and date of event. They can retrieve and report data flexibly, allowing multiple views of the data for a given patient and for defined (user-specified) populations. These systems offer a research tool for tracking clinical and economic outcomes and for identifying practice pattern variations among providers.

However, to fully capture the potentiality of these CPR technologies, several evolutionary steps are required (Institute of Medicine 1991): (1) low-cost, powerful clinical workstations with improved, user-friendly human-machine interface; (2) acceptance of consensual standards for data elements in the record, such as, a uniform, integrated minimum data set comprised of clinical, financial, and intertemporal measures of clinical outcomes, patient satisfaction, and health status; (3) enhanced security of individual patient care data; and, (4) reduced CPR system development costs and enhanced networks for transmitting data. While the development of a CPR is a critical step in integrating clinical services, particularly across multiple delivery sites, it is not sufficient. To achieve true clinical integration across providers, the system seeking to orchestrate such integration must fashion tools for collecting, organizing, reporting, and enhancing exchange of the information in the CPR--joined to other financial, demographic, and person-based data germane to managing the individual patient's care (and amenable to aggregation as information for managing the care of populations).

CARE MANAGEMENT STRATEGIES

The creation of system-level care managing protocols for different clinical conditions (e.g., stroke, hypertension, coronary artery disease, diabetes, low back pain) should be informed by the national work on clinical practice guidelines but is not necessarily dependent on those guidelines. These care protocols will vary in their specificity, depending on the state of the art in medical science and the variation in patient preferences for particular health problems. Creation of clinically integrated practice patterns throughout a regional health system requires mechanisms for developing, implementing, testing, and evaluating clinical plans (protocols) for managing the care of particular health conditions. CPR systems are of great value in enhancing the real-time recording and reporting of individual patient data, and ultimately serve as a tool for systematic (and systemwide) research identifying the most cost-effective practice patterns.

Three information exchange mechanisms in particular are likely to promote clinical integration. Individualized practitioner feedback regarding costs, clinical outcomes, patient satisfaction, and self-perceived health status tied to peer comparisons for given health conditions is a first step in building clinical consensus among providers. The electronic "bulletin board" capacities of modern microcomputers would also permit physicians at different locations to share insights regarding the care of a given patient. These computer-intensive exchanges could be reinforced by system-level "practice pattern grand rounds," in which clinically and scientifically credible data on the broad-based outcomes of specific practice regimens would be presented and discussed. These grand rounds would include case studies describing how the care of individual patients was managed across multiple delivery points.

The regional health system seeking clinical integration would deploy a diversified array of direct care management strategies, too. This systemwide effort might begin by identifying empirically the health conditions accounting for the preponderance of patient care activity; in short, the system would focus on, say, the 20 percent of clinical processes that account for 80 percent of patient revenues (or other volume measure) in the system. Alternatively, the system might concentrate on those processes for

which the potential payoff in community health improvement is greatest.(5) This application of the "Pareto (80/20) rule" focuses on the energies of the clinical and managerial team. These "clinical processes" (patterns of care for identified conditions) would be studied and practice pattern variances would be highlighted along with their sources (e.g., frequency of admissions, hospital length of stay, test ordering and drug presenting, specialty referrals and consultation rates).

As a result of this process, approaches to managing care more appropriately for specific conditions would be developed by the medical staff of the system. Use of the term "medical staff" at the level of the system raises two structural issues for clinical integration. First, in a health system with multiple hospitals, clinical integration would be enhanced by granting physicians admitting privileges across those hospitals, particularly if the hospitals are specialized in different stages along the vertical continuum of care. An alternative approach, followed in some European countries and modeled on the original basis for care at the Mayo Clinic and Henry Ford Health System, is to establish "inpatient specialists," who work exclusively or primarily in hospital settings and to whom patients are referred for inpatient work.(6) Second, discussion groups and forums must be formed to facilitate consensus on clinical issues across the boundaries of system hospitals, primary care versus other specialty physicians, and different secondary/tertiary specialty disciplines. For example, Sharp Healthcare of San Diego, California, a countywide health system of five hospitals, approximately 1,300 inpatient beds, five skilled nursing facilities, 14 outpatient clinics, and seven capital medical groups, has instituted a set of service-line forums to introduce "system thinking" in particular clinical areas such as women's health, cardiovascular services, medical oncology, and orthopedic/neurological/rehabilitation services (Koch 1992). The goal of these structural complements to care management strategies is to create integrated system thinking through clinical consensus and processes of caring for particular health conditions.

SYSTEMATIZING TECHNOLOGY-RELATED DECISIONS

Coordinated evaluation, acquisition, and diffusion of patient care technology at the system level represents another form of care management strategy. A report on the effect of new surgical technologies on hospital strategies (Anderson and Lumsdom 1992) referred to the emergence of technology evaluation committees within hospitals. The Hospitals article highlighted how the growing use of endosurgery and minimally invasive laparoscopy has accelerated the shift of surgical care from inpatient to outpatient settings. System-level technology assessment and coordinated diffusion and use of technologies are imperative if care is to be integrated among specialties (e.g., urology and gastroenterology, and gynecology in the case of endosurgery) and across inpatient and outpatient treatment sites. Coordination of treatment technology within the regional health system also will force consideration of physician credentialing for specific procedures and training other clinical and support staff in the logistics involved in using the new technologies. If the system seizes the initiative with respect to these credentialing and training issues, the prospects for integrating clinical decisions through coordination of technology will be improved dramatically.

COORDINATED CARE MANAGEMENT

Strategies for care management fall into four categories: (1) coordination by clinical nurse specialist; (2) coordination by interdisciplinary clinical team; (3) case management by primary care physician; and (4) ongoing patient-specific care planning and system assistance for patients, particularly in the interludes between professional care. These four care management strategies are not mutually exclusive and can be used in combination. For example, the primary care physician has traditionally served as the case manager for the bulk of the hospital inpatients, and this role at the individual patient level could be augmented by a clinical nurse specialist directly accountable to senior management for coordinating a clinical program (e.g., cardiovascular services for a population). To integrate patient care across specialty boundaries and different sites of care--hospital, office, surgicenter--physicians and nurses

participating in the regional health system also might meet in clinical conferences to discuss the progress of individual patients. Microcomputer-based information networks tying together these clinicians at multiple sites would enable electronic "conferencing" and electronic mail communication.

BUILDING A COMMON CLINICAL CULTURE

The regional health system as an organization also can stimulate clinical integration by taking steps to build a common clinical culture. Macrostrategies for attaining this commonality include the appointment of a system medical director or vice president for medical affairs and a system vice president for nursing with responsibility for the comprehensive range of patient services and related operations. Medical, nursing, and senior organizational leadership would work together to coordinate total quality management (TQM) processes systemwide, particularly tapping the advantages of nursing's "proximity to patient and family" (Arthur Andersen and the American College of Healthcare Executives 1991). The development of continuous quality improvement (CQI) and TQM at the system level represents a powerful tool for clinical integration in the structure and process of patient care (Sahney and Warden 1991).

EDUCATIONAL PROGRAMMING

Educational programming offers the regional health system another macroinstrument for clinical integration. Continuing clinical education programs have tremendous potential to improve the integration of patient care by targeting specific clinical processes (e.g., care of the diabetic patient), organ systems (e.g., pulmonary, cardiovascular), and patient management problems (e.g., coordinating information flow and case conferencing for multiple clinical professionals in the care of patients in the stroke rehabilitation program).

More fundamentally, education could play a role in reexamining the role of specialists relative to primary care physicians. The basic principle would be to push patient care to the primary care level wherever possible by enhancing the primary care physician's comfort and competency in managing specific health problems. Using this logic the urologist or urological surgeon eschews the routine management of patients with benign hypertrophy of the prostate, while the primary care physician manages the initial workup and presentation of patient care options prior to referral for possible prostatectomy. Thus, education is "passed down the specialty-primary care chain" and used as a tool to tap the comparative advantage in clinical expertise of clinicians of differing types and degree of specialization.

Moreover--and this is essential--those same clinical education programs must systematically incorporate the role of the patient. Also, parallel patient education efforts, targeted on health conditions and issues corresponding to clinical education programs, should be pursued by the regional system. The individual embodies the clinician's partner in patient care integration, and systems ought not miss the opportunity to fully incorporate the patient as his or her own clinical "co-integrator." Creative use of patient satisfaction and patient-based outcome measurement instruments would reinforce the patients' status as their own care integrator.

PAYMENT INCENTIVES FOR CLINICAL INTEGRATION

Provider payment methods are increasingly acting as a catalyst for clinical integration. In principle, the more global the unit of payment (on a continuum from fee-for-service to per case, to per episode of care, to capitation, to salary), the stronger the economic incentive for a closer relationship between providers at different stages in the health care continuum: Payment method therefore becomes an indirect

integrating mechanism for patient care. For example, it is no accident that payment of physicians on salary, often with a capitation-based budget for the medical group as a whole, is most closely associated with prepaid multispecialty group practice arrangements. The salary payment method is one of the "bonding elements" that unifies the economic interests of the physicians and thereby favors clinical integration.

More recent, the Medicare experiment in paying "bundled fees" to hospitals for coronary artery bypass graft surgery (Winslow 1992) demonstrates episode-of-care pricing. The package price includes both hospital and physician charges that otherwise might account for as many as eight to ten separate bills to the patient. Increasingly, large purchasers are negotiating package price arrangements for organ transplants, maternity care, and various forms of cardiovascular surgery. The Medicare demonstration sites report (Winslow 1992) that cardiac surgeons have reduced their use of consultants, have changed operating schedules to better coordinate care and to eliminate excessive use of intensive care units, and have participated to reduce lengths of stay and to rethink basic practice patterns.

MECHANISMS FOR CLINICAL INTEGRATION: WITH OWNERSHIP

Clinically speaking, ownership per se adds no new integration options to coordinating patient care. However, common ownership by a single regional health system of all the steps in the vertically related continuum of care does indirectly potentiate greater coordination of patient care.

*The "owning" system employs the inputs at all stages of the clinical (patient care) process, and thus can use authority, hierarchical supervision and control, and common (systemwide) compensation mechanisms for clinical professionals and support staff.

* The use of compensation to reward, and fiat to enforce, more closely coordinated patient care is clearly enhanced by joining the human, physical, and information capital resources in a single firm (locus of ownership).

* Common ownership means unified equity capital investment in the regional health system's core technologies, and this probably increases the health system's strategic speed and flexibility in allocating physical capital and informational and patient care technologies to a singular purpose. This would (again, indirectly) facilitate clinical integration--initially at the level of population-based coordination of clinical programs, and ultimately in the coordination of an individual patient's pathway of care.

Certain economic joint ventures between hospitals and physicians may detract from the coordination of care--for example, hospital-physician joint venture investments in specific capital equipment such as MRI and mammography machines. In theory, such vertical "tie-ins" need not distort physicians' treatment choices. In practice, however, the combination of physician market power, virtual ignorance among consumers of the cost-benefit relationship for these procedures, and the modest share of procedure cost borne by the patient appears to have led to overutilization of these procedures by owner-physicians (Hillman 1990). Even for cases in which physicians' decisions are not demonstrably skewed by their investment incentives, these types of narrowly focused joint ventures confuse capital market investment by physicians with their principal role as service provider. In that sense, such arrangements distract physicians from their true comparative advantage--cost-effective primary and specialty care. By introducing such "noise" into the relationships among referring and referral physicians and between physicians and hospitals, the efficiency of clinical integration is reduced. Moreover, the concept of the physician as equity investor is fatally flawed; physicians lose valuable diversification in their personal financial portfolios when they plunge significant financial capital into the very service lines where so much of their human capital is invested.

MAJOR OPPORTUNITIES FOR CLINICAL INTEGRATION

Three studies since 1980 (Robert Wood Johnson Foundation 1981; Koska 1988; National Center for Health Statistics 1992) taken together shed light on the degree of referral dependence of physicians in the different specialties and the extent of those specialties' hospital inpatient activity. To the extent these two factors are important indicators of opportunity for mutually beneficial clinical integration among physicians and between the hospital and physicians, the greatest demands for increased conductivity are likely to be in the following specialties--orthopedic surgery, cardiology, pulmonary disease, neurosurgery, medical oncology, general surgery, and obstetrics and gynecology. The development of "focus areas" in cardiovascular services, medical oncology, orthopedics/neurology/rehabilitation services, and women's health at the Sharp HealthCare System in San Diego, California, partially validates this prediction. These focus areas are strengthened by carefully circumscribing hospital medical staff roles within these areas: limits on physician credentialing for specific procedures and the recruitment of hospital-based physicians and contract physicians to support these centers are important strategies for achieving "best practice patterns" within the system (Koch 1992).

As another example of clinical integration, Baylor Medical Center has affiliated with six other hospitals in the greater Dallas, Texas metropolitan area to form the Baylor Health Care System (Parris 1992). Projecting that cardiovascular care will account for approximately 24 percent of system hospital revenues, the system has formed the Baylor Cardiovascular Institute, which ties together care in the following areas: invasive and noninvasive cardiology including surgical and nonsurgical treatment, interventional radiology, cardiovascular surgery, cardiothoracic surgery, heart transplant, and primary care (e.g., stroke prevention and rehabilitation).

NEXT STEPS IN REALIZING THE VISION OF CLINICAL INTEGRATION

Three steps appear to actualize the potential for clinical integration of health services in regional health systems: (1) service payment packages must be structured that stimulate clinical integration and that institutionalize coordinated care (hospital-physician, interspecialty, and primary-secondary-tertiary). Episode-of-care (service package) pricing and capitation are the two most promising payment options for encouraging integrated patient care; (2) effective patient care integration will be assisted substantially by an information network that provides real-time, simultaneous, multiview access to computerized personal health information; and, for populations, comparative health and economic outcomes over time, by physician and by episode of care; (3) the physician's training and the nature of the explanatory models that physicians use to diagnose and treat patient conditions suggest both constraints on, and opportunities for, clinical integration. The training and theoretical paradigm in medicine emphasize the biomedical basis of disease processes and the nature of the patient's symptoms and dysfunction. Moreover, medicine is increasingly specialized and compartmentalized by organ system or type of clinical management--medical or surgical. In light of these realities, an important step toward greater patient care coordination would involve training and support for what John Peirce calls the "the generalist physician." This practitioner would be responsible for the comprehensive management of patient care and the management of information related to the care process. As Jack Peirce has put it, the generalist would assume responsibility for design issues--how to deliver comprehensive health and medical care in and beyond the ambulatory setting.(7)

Finally, regional health systems must continue to experiment with alternative organizational and professional ways of nurturing systemwide clinical thinking. As one means of stimulating systemwide thinking by clinicians, health organizations might fashion clinician cooperatives. This concept is an extension of the notion of physician cooperatives recently elucidated by J. Daniel Beckham (1990). Under this model, physician practices might affiliate with each other for certain purposes, while still retaining independent ownership and management.

The purposes of such cooperatives would include: creation of a virtual "brand name" identity for physicians participating in the cooperative and built principally around coordinated referral patterns; linkage of practices to shared information systems; availability of standardized clinical support services to all practices; access to institutional support (through a hospital or multispecialty group) for development of new service lines, such as screening; and implementation of a cooperativewide CQI program. Beckham's (1990) physician cooperative model could be extended to include other clinicians in health and social services. Nursing and other clinical professionals, including those skilled in prevention and social services, are essential components of the "clinical cooperative," particularly where the ultimate aim is improvement of health. This broadened definition of the cooperative is attainable through the systems of support for service lines, standardized clinical support services to all practices, and the implementation of a cooperative CQI program.

Indeed, the cooperative model might be viewed as a transition phase in an evolution toward more complete, system-level clinical integration of patient care. As such, the role of management will be crucial in aligning the incentives, norms, and practices of the different parties to the cooperative.

CONCLUSIONS

This article has built its argument concerning the requirements for (and challenges to) clinical integration on the underlying economic and organizational theory of vertical integration. Therefore, the key factors driving vertical integration in general--prospective payment of physicians and hospitals, the declining cost of information networking across providers, population aging and increasing chronicity of illness, and the rise of managerial and governance structures shaping vertical integration--are also hypothesized to affect the nature and degree of clinical integration. The same framework was used to organize the article's treatment of issues in implementing clinical integration. The brief treatment of implementation challenges was meant only to highlight the practical difficulties that are identified logically by the conceptual "lens" of the article; detailed suggestions for their solution are beyond the scope of this article.

However, two crucial issues deserve some concluding comment. First, in geographic areas where population, hospital and physician supply and demographics would support only one full-service regional health system, such a system would effectively have a "natural monopoly" on health services. Kronick et al. (1993) estimate that such a monopoly is more likely in areas with population less than 180,000 (29 percent of U.S. population is in such areas), and a population of 1.2 million would be needed to support three or more independent integrated health systems (58 percent of U.S. population is outside such areas). Thus, smaller population centers would require cooperative planning and appropriate regulatory structures to ensure access in those areas and to avoid unnecessary duplication of services. This is clearly a challenge to the health insurance purchasing cooperatives (or health alliances) within the managed competition model currently touted in health care financing reform (Starr and Zelman 1993).

Finally, the notion of regional clinical integration is not new. Indeed, the "AmeriPlan" universal health insurance proposal of the American Hospital Association in the early seventies had regional vertical integration as its centerpiece. One might ask, "If regional clinical integration is fundamentally a good idea, why has it not been implemented already; and what would make it more likely to succeed now or in the future?" My answers to that question are that (1) the prospective payment payment incentives for integration were not in place then, but are rapidly developing now, (2) the pressures of health reform for cost control and improved access to health insurance and health services have placed a substantially increased premium on clinically integrated patient care, and (3) dramatic improvements in the cost and quality of computing and information networking over the past 20 years have broadened and deepened the possibilities for clinical integration. If this reasoning is correct, the discussion of clinical integration

can move forward to consideration of the considerable challenges to its implementation.

NOTES

1. The work of Jan Clement has been a significant exception to this confusion. In her 1988 article "Vertical Integration and Diversification of Acute Care Hospitals: Conceptual Definitions," which appeared in the Spring issue of *Hospital & Health Services Administration* (pp. 99-110), Clement clarifies the economic distinction between product diversification, which does not focus on the coordinated care of a given patient over time, and vertical integration.
2. I owe the elaboration of this point to Jeffrey Alexander (1992), whose ideas have influenced mine, but whose formulation of the administrative-organizational paradigm for physician-hospital integration goes well beyond the notions presented here.
3. The region is defined as a geographic area within which health services for an individual can be coordinated and within which systems of care for patient populations can be organized.
4. I owe the insight for this point to Jeffrey Alexander's presentation to the Henry Ford Health System Symposium, "Integration of Physician and Clinical Services," 3 June 1992.
5. Eastaugh's (1992) analysis of scope of service specialization found that a 26 percent increase in the extent of hospital specialization (measured by an "entropy index") was related to a 6.9 percent decline in unit cost per hospital admission during the period 1983-1990.
6. Steve Shortell highlighted this different perspective in implementing the "Pareto" rule (personal communication).
7. Jack Peirce's notes and our discussion have been the source of these ideas.

REFERENCES

- Anderson, H.J., and K. Lumsdom. "New Surgical Technologies Reshape Hospital Strategies." *Hospitals* (5 May 1992): 30-40.
- Arthur Andersen, and the American College of Healthcare Executives. *The Future of Healthcare: Physician and Hospital Relationships*. Chicago: The College, 1991.
- Beckham, J.D. "Group Advantage: How Hospitals Can Capture the Benefits of the Large Multi-Specialty Group Practice." *Healthcare Forum Journal* 33, no. 5 (September-October 1990): 35-39, 41.
- Christensen, S. "Volume Responses to Exogenous Changes in Medicare's Payment Policies." *Health Services Research* 27, no. 1 (April 1992): 65-79.
- Conrad, D.A., and W.L. Dowling. "Vertical Integration in Health Services: Theory and Managerial Implications." *Health Care Management Review* 15, no. 4 (Fall 1990): 9-22.
- Conrad, D.A., S.S. Mick, C.W. Madden, and G. Hoare. "Vertical Structures and Control in Health Care Markets: A Conceptual Framework and Empirical Review." *Medical Care Review* 45, no. 1 (Spring 1988): 49-100.

Eastaugh, S.R. "Hospital Specialization and Cost-Efficiency: Benefits of Trimming Product Lines." *Hospital Health Services Administration* 37, no. 2 (Summer 1992): 223-36.

Fahey, D.F. "Projected Responses to Changes in Physician RBRVS Reimbursement: Induced-Demand Theory versus Contingency Theory." *Medical Care Review* 49, no. 1 (Spring 1992): 67-91.

Harrigan, K.R. "Vertical Integration and Corporate Strategy." *Academy of Management Review* 28 (June 1985): 397-425.

Hillman, B.J. "Frequency and Costs of Diagnostic Imaging in Office Practice--A Comparison of Self-Referring and Radiologist-Referring Physicians." *New England Journal of Medicine* 328, no. 23 (6 December 1990): 1604-8.

Institute of Medicine. *The Computer Based Patient Record: An Essential Technology for Healthcare*. Washington, DC: National Academy Press, 1991.

Koch, C.S. Presentation at Henry Ford Health System Symposium, "Integration of Physician and Clinical Services," 3 June 1992.

Koska, M.T. "High Tech Specialties Generate Tax Dollars." *Hospitals* 62 (20 October 1988): 72, 74.

Kronick, R., D.C. Goodman, J. Wennberg, and E. Wagner. "The Marketplace in Health Care Reform: The Demographic Limitations of Managed Competition." *New England Journal of Medicine* (14 January 1993): 148-52.

Luft, H.S., and S.S. Hunt. "The Volume-Outcome Relationship: Practice Makes Perfect or Selective Referral Patterns?" *Health Services Research* 21, no. 2 (June 1987): 157-82.

National Center for Health Statistics. *National Ambulatory Medical Care Survey: 1989 Summary. Series 13, no. 110*. Atlanta, GA: Centers for Disease Control, 1992.

Parris, T. Presentation at Henry Ford Health System Symposium, "Integration of Physician and Clinical Services," 3 June 1992.

Robert Wood Johnson Foundation. *Medical Practice in the United States: A Special Report of the Robert Wood Johnson Foundation*. Princeton, NJ: The Foundation, 1981.

Safran, C., C. Rury, D.M. Rink, and W.C. Taylor. "A Computer-Based Outpatient Medical Record for a Teaching Hospital." *MD Computing* 8, no. 5 (September-October 1991): 291-99.

Sahney, V.K., and G. Warden. "The Quest for Quality and Productivity in Health Services." *Frontiers of Health Services Management* 7, no. 4 (Summer 1991): 2-40.

Starr, P., and W.A. Zelman. "A Bridge to Compromise: Competition under a Budget." *Health Affairs* (Supplement 1993): 6-23.

Winslow, R. "Package Deals: Medicare Tries to Save with One-Fee Billing for Some Operations." *Wall Street Journal*, 10 June 1992.

Williamson, O.E. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: The Free

Press, 1975.

ACKNOWLEDGMENTS

I am grateful for the helpful comments and careful reading of a prior version of this manuscript by David Nerenz, Jack Peirce, Austin Ross, Steve Shortell, Naomi Soderstrom, and Karen Travis. I am, of course, solely responsible for any errors of fact or interpretation in this article.

Address correspondence and requests for reprints to Douglas A. Conrad, Ph.D., Department of Health Services, University of Washington, F343 Health Sciences Building, Seattle, WA 98195.

Douglas A. Conrad, Ph.D., is Professor, Department of Health Services, Graduate Program in Health Services Administration, University of Washington, Seattle. He is a Faculty Associate of the College.

Copyright © American College of Healthcare Executives 1993

ABI/INFORM®

© 2007 ProQuest Information and Learning. All rights reserved.

Dialog® File Number 15 Accession Number 798403